

Application No.: 09/919,262

Docket No.: HO-P01776US1

CLEAN VERSION OF CLAIMS

1. A disposable absorbent garment, comprising:

a topsheet;

a backsheet; and

an absorbent core disposed between said topsheet and said backsheet,

said topsheet, said backsheet and said absorbent core being assembled together to form a layered assembly including a front region, a back region, and a crotch region disposed between said front region and said back region, said layered assembly having a longitudinal plane that extends substantially centrally through said, front, back and crotch regions;

wherein each of said front and back regions further includes at least a pair of ear portions extending in substantially opposite lateral directions with respect to said longitudinal plane, and

wherein at least one of said ear portions includes a layered section comprising

an outer material layer having an inside surface and an outside surface, said outside surface having a decorative or instructional display thereon and

an elastic stretchable non-permanently elongated member extendible between a contracted configuration and an extended, non-permanently elongated configuration, said inside surface being secured to a corresponding surface of said stretchable member when said stretchable member is disposed in an extended configuration and said outside surface is disposed in a substantially planar configuration, wherein said display is observable thereon such that said outer material layer is subsequently contractible then extendible with said stretchable member and such that said outside surface is returnable to said substantially planar configuration without permanent elongation of said outer material layer and said stretchable non-permanently elongated member, wherein said display on said outside surface is unobscured and observable when said outside surface is disposed in said substantially planar configuration and said display is substantially less observable and less unobscured when said stretchable member is disposed in a contracted configuration.

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3. The garment of Claim 1, wherein said outside surface is returned to said substantially planar configuration when said stretchable member extends from a contracted configuration to an extended configuration.

5. The garment of Claim 1, wherein said outer material layer is secured to said stretchable member such that said outer material layer exhibits gathers when said stretchable member is disposed in said contracted configuration.

6. The garment of Claim 1, wherein said stretchable member includes a heat-activated elastomer that contracts from an initial extended configuration upon application of heat, and wherein said outer material layer is secured to said stretchable member when said heat-activated elastomer is disposed in said initial extended configuration.

7. The garment of Claim 1, wherein said ear portions of said front region are joined to corresponding ear portions of said back region to form a waist opening and a pair of leg openings.

8. The garment of Claim 1, wherein said stretchable member is an elongated member having a first end and a second end, said first end being disposed in an ear portion of said front region and said second end being disposed in an ear portion of said back region.

9. The garment of Claim 1, wherein said stretchable member is an elongated stretchable member having a first end and a second end, said first end being disposed in said at least one ear portion and said second end being disposed in a second ear portion, wherein said at least one ear portion is disposed on one side of said longitudinal plane and said second ear portion is disposed on an opposite side of said longitudinal plane.

10. The disposable garment of Claim 1, wherein said stretchable member is positioned within said ear portion such that said ear portion is stretchable in a direction substantially lateral with respect to said longitudinal plane.

11. The garment of Claim 1, wherein said layered section further includes a second outer material layer secured to a surface of said stretchable member generally opposite to said corresponding surface of said stretchable member, and wherein said stretchable member is disposed between said first outer material layer and said second outer

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material layer, said first and second outer material layers being secured to said stretchable member when said stretchable member is disposed in said extended configuration such that said first and second outer material layers are subsequently contractible then extendible with said stretchable member.

12. The garment of Claim 11, wherein said backsheet includes a backsheet central section and said topsheet includes a topsheet central section, and wherein said first outer material layer is formed unitary with said backsheet central section and said second outer material layer is formed unitary with said topsheet central section.

13. The garment of Claim 11, wherein said first outer material layer is a portion of said backsheet, and wherein said topsheet includes a topsheet central section, said second outer material layer being a portion of said topsheet that is distinct from and joined integrally with said topsheet central section.

14. The garment of Claim 1, wherein each of said other ear portions includes a layered section comprising

an outer material layer, and

a stretchable member extendible between a contracted configuration and an extended configuration, said outer material layer being secured to said stretchable member when said stretchable member is disposed in an extended configuration such that said outer material layer is subsequently contractible then extendible with said stretchable member.



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15. A disposable absorbent garment comprising:

a layered core assembly including a topsheet, a backsheet, and an absorbent core positioned between said topsheet and said backsheet; and

at least a pair of extendible ear assemblies positioned on laterally opposite sides of said layered assembly, each of said ear assemblies including an elastic stretchable non-permanently elongated member and an outer material layer joined to said elastic member, said outer material layer having an outside surface and an inside surface, said inside surface being secured to a corresponding surface of said elastic member when said elastic member is disposed in an extended configuration, wherein said outer material layer exhibits gathers when said elastic member is disposed in a relaxed configuration, said elastic member being extendible between a contracted configuration and an extended, non-permanently elongated configuration, said inside surface being secured to a corresponding surface of said stretchable member when said stretchable member is disposed in an extended configuration and said outside surface is disposed in a substantially planar configuration, such that said outer material layer is subsequently contractible then extendible with said stretchable member and such that said outside surface is returnable to said substantially planar configuration without permanent elongation of said outer material layer and said stretchable non-permanently elongated member.

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18. A method of making a stretchable ear portion in a composite web structure used for forming a disposable absorbent garment, said method comprising the steps of:

providing a first layer having a front longitudinal end, a back longitudinal end and a pair of opposing lateral edges therebetween;

providing a second layer having a front longitudinal end, a back longitudinal end, and a pair of opposing lateral edges therebetween;

providing an absorbent core;

providing a stretchable member contractible from a stretched configuration to a contracted configuration;

positioning said stretchable member adjacent a first section of said first layer, said first section being located proximate one of said lateral edges and one of said longitudinal ends of said first layer and having an inside surface and an outside surface generally opposite said inside surface, said outside surface having a decorative or instructional display printed thereon;

securing said inside surface to said surface of the stretchable member when said outside surface is disposed in a substantially planar configuration such that said display is observable thereon and said stretchable member is disposed in a stretched configuration, such that said first section is subsequently extendible with said stretchable member from a contracted configuration in which said display is substantially less observable and less unobscured to an extended configuration wherein said outer surface is returned unaltered to said substantially planar configuration; and

securing said first layer, said second layer and said absorbent core together to form a web structure having a central longitudinal plane and including a front region that includes said front longitudinal ends and a pair of ear portions extending in substantially opposite lateral directions with respect to said longitudinal plane, a back region including said back longitudinal ends and a pair of ear portions extending in substantially opposite lateral directions with respect to said longitudinal plane, and a crotch region disposed between said

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front region and said back region, whereby said stretchable member and said first section are included in one of said ear portions to form a stretchable ear portion.

20. The method of Claim 18, wherein said step of providing a stretchable member includes providing a stretchable member including a heat-activated elastomer that contracts from an initial extended configuration upon application of heat, said method further comprising the step of:

applying heat in a vicinity of said stretchable material, after said step of securing first section to said stretchable member, to contract said stretchable member and said first section to a contracted configuration and to activate the elasticity of said elastomer.

21. The method of Claim 18, wherein said step of positioning said stretchable member includes positioning said stretchable member adjacent a second section of said second layer, wherein said second section is located proximate one of said lateral edges and one of said longitudinal ends of said second layer, said method further comprising the step of securing said second section to a second surface of said stretchable member, while said stretchable member is disposed in said extended configuration, such that said second section is subsequently extendible with said stretchable member.

22. The method of Claim 18, wherein said stretchable member has a first end and a second end, and wherein said step of positioning said stretchable member includes positioning said first end adjacent said first section, said first section being proximate said front longitudinal end of said first layer and positioning said second end adjacent a second section, said second section being proximate said back longitudinal end of said first layer, said method further comprising the step of securing said second section to a surface of said stretchable member adjacent said second end.

23. The method of claim 22, further comprising the step of:

cutting out an intermediate side section of said web structure through said first layer, second layer, and said stretchable member, said side section being intermediate said longitudinal ends of said first and second layers and intermediate said first and second ends of said stretchable member, to form a mateable pair of stretchable ear portions.

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24. The method of Claim 18, wherein said stretchable member has a first end and a second end, and wherein said step of positioning said stretchable member includes positioning said first end adjacent said first section, and positioning said second end adjacent a second section of said first layer, wherein said second section is proximate said other lateral edge of said first layer, said method further comprising said step of securing said second section to a surface of said stretchable member adjacent said second end.

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25. A disposable absorbent garment comprising:

a layered assembly including

a topsheet

a backsheet, and

an absorbent core disposed between said topsheet and said backsheet,

said layered assembly having a first pair of elasticated ear portions and a second pair of elasticated ear portions, each of said first and second pairs of elasticated ear portions being joined to define a waist opening and a pair of leg openings; and

wherein each of said ear portions includes

an ear section of said topsheet having an outside surface

an ear section of said backsheet having an outside surface, said outside surface of said backsheet having a decorative or instructional printed display thereon, and

an elastic stretchable non-permanently elongated member disposed between said ear sections and extendible between a contracted condition and an extended, non-permanently elongated condition, said ear sections being secured to said elastic member such that said ear sections are extendible with said elastic member from a contracted configuration to an extended configuration wherein each of said outside surfaces is disposed in a substantially planar configuration substantially corresponding with a configuration taken on by each said outside surface when said garment is worn, such that said display is substantially observable thereon, and wherein said ear sections are secured to said elasticated member when said elastic member is disposed in said extended condition, such that said ear sections are extendible with said elastic member from a contracted configuration, wherein said display is substantially less observable to an extended configuration wherein each of said outer surfaces is returned unaltered to said substantially planar configuration without permanent elongation of said outer material layer and said stretchable non-permanently elongated member.

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27. The garment of Claim 25, wherein each of said ear sections has an inside surface positioned generally opposite one of said outside surfaces, said inside surface being secured to a corresponding surface of said elastic member.

28. The garment of Claim 25, wherein said outside surfaces exhibit gathers when said ear sections are disposed in said contracted configuration.

29. The garment of Claim 25, wherein said elastic member includes a heat-activated elastomer that contracts from an initial extended condition upon application of heat, and wherein said ear sections are attached to said elastic member when said heat-activated elastomer is disposed in said initial extended condition.

30. The garment of Claim 25, wherein said elastic member is an elongated elastic member having one end disposed in one of said pairs of joined ear portions and a second end disposed in a corresponding one of said other pair of joined ear portions.

31. The garment of Claim 25, wherein said elastic member is positioned in said ear portion such that said ear portion is extendible in a direction substantially lateral with respect to said longitudinal plane.

32. The garment of Claim 25, wherein said layered assembly includes a front region from which two of said ear portions extend in substantially lateral directions with respect to said longitudinal plane, a back region from which two other of said ear portions extend in substantially lateral directions with respect to said longitudinal plane, and a crotch region disposed between said front region and said back region.

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33. A method of making a disposable garment having an elasticated ear portion, said method comprising the steps of:

providing a first layer and a second layer, each layer including a front section having a first pair of ear sections, a back section having a second pair of ear sections, a crotch section extending between said front and back sections, and a longitudinal axis extending substantially centrally between said front section, back section, and crotch section, wherein said pairs of ear sections extend substantially laterally respective of said longitudinal axis, wherein each said ear section has an outside surface provided with a display thereon;

providing an absorbent core;

providing an elastic member contractible from an extended configuration to a relaxed configuration;

positioning said elastic member adjacent a first ear section of said first layer;

securing said first ear section to a surface of said elastic member, while said elastic member is disposed in an extended configuration and while said outside surface of said first ear section is extended so as to be substantially smooth and planar, such that said first ear section is subsequently contractible, wherein said display is substantially less observable and extendible with said stretchable member and returnable to the extended configuration wherein the outer surface is substantially smooth and planar, and substantially unaltered from when the first ear section is initially secured to the elastic member and wherein said display is observable thereon;

positioning said absorbent core centrally adjacent said first layer;

securing said first layer, said second layer and said absorbent core together, such that said longitudinal axes align, to form a composite structure having a front region that includes said front sections and a pair of laterally extending ear portions, a back region that includes said back sections and a pair of laterally extending ear portions, and a crotch region that includes said crotch sections, whereby said elastic member and said first ear section are included in one of said ear portions to form an elasticated ear portion; and

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joining each of said ear portions of said front region with a corresponding ear portion of said back region to define a waist opening and a pair of leg openings.

35. The method of Claim 33, further comprising the step:

cutting out a pair of intermediate sections of said composite structure before said joining step, wherein each of said intermediate sections is located between an ear portion of said front region and a corresponding ear portion of said back region.

36. The method of Claim 33, wherein said step of providing an elastic member includes providing an elongated elastic member having a first end and a second end and wherein said step of positioning said elastic member includes positioning said first end adjacent said first ear section of said first layer and positioning said second end adjacent a second ear section of said first layer, said method further comprising the step of:

securing said second ear section to a second surface of said elastic member, while said elastic member is disposed in an extended configuration, such that said second ear section is subsequently contractible and extendible with said elastic member.

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